

## **AMENDMENTS TO THE CLAIMS:**

The listing of claims will replace all prior versions, and listings of claims in the application:

## **LISTING OF THE CLAIMS**

1. (Currently Amended) A powder injection microchip comprising:  
a gas supply inlet for supplying gas;  
an outlet;  
a channel in fluid connection with the gas supply inlet and the outlet;  
a powder reservoir; and  
a powder inlet in fluid connection with the channel for receiving an open first, ~~open~~ end of a the powder reservoir, the powder reservoir having an opening at or near to a second end of the powder reservoir to allow egress of gas from the powder reservoir at a point distal to the open first end of the powder reservoir.
2. (Currently Amended) A powder injection microchip according to claim 1 further comprising control means for controlling the supply of gas via the gas supply inlet, the control means being arranged, in use:
  - (i) to supply gas via the gas supply inlet to the channel and the powder inlet at a velocity sufficient to cause fluidisation of powder at the powder inlet;
  - (ii) to reduce the supply of gas to cause powder to pass from the powder inlet and to collect in a region of the channel adjacent a point where the powder inlet connects with the channel; and
  - (iii) to repeat steps (i) and (ii) ~~as many~~ a plurality of times ~~as required~~, subsequent initialisation of step (i) causing the powder collected in the channel to be moved by the gas towards the outlet.
3. (Currently Amended) A powder injection microchip for use with a powder reservoir having an open first, ~~open~~ end and an opening at or near to a second end of the powder reservoir to allow egress of gas from the powder reservoir at a point distal to

the open first end of the powder reservoir; the powder injection microchip comprising:

a gas supply inlet for supplying gas;

an outlet;

a channel in fluid connection with the gas supply inlet and the outlet;

a powder inlet in fluid connection with the channel for receiving a powder reservoir; and

control means for controlling the supply of gas via the gas supply inlet, the control means being arranged, in use:

(i) to supply gas via the gas supply inlet to the channel and the powder inlet at a velocity sufficient to cause fluidisation of powder at the powder inlet;

(ii) to reduce the supply of gas to cause powder to pass from the powder inlet and to collect in a region of the channel adjacent a point where the powder inlet connects with the channel; and

(iii) to repeat steps (i) and (ii) ~~as many times as required~~, subsequent initialisation of step (i) causing the powder collected in the channel to be moved by the gas towards the outlet.

4. (Previously Presented) A powder injection microchip according to claim 3 wherein in step (ii) the supply of gas is reduced to zero.

5. (Previously Presented) A powder injection microchip according to claim 1 further comprising at least two planar layers in at least one of which the channel is formed.

6. (Previously Presented) A powder injection microchip according to claim 1 wherein the width of the channel is less than 5mm.

7. (Previously Presented) A powder injection microchip according to claim 1 wherein the channel includes a bifurcated section, each branch of the bifurcated section being in fluid connection with the powder inlet.

8. (Currently Amended) A powder injection microchip according to claim 1 wherein

the amount of powder collected in the channel is determined by ~~at least one of the following, separately or in combination:~~

- ~~i) the a height of the powder in the powder reservoir~~
- ~~ii) the dimension of the powder inlet.~~

9. (Cancelled).

10. (Currently Amended) A powder injection method for use with a powder injection microchip, the powder injection microchip comprising:

a gas supply inlet for supplying gas;

control means for controlling the supply of gas via the gas supply inlet;

an outlet;

a channel in fluid connection with the gas supply inlet and the outlet;

a powder inlet in fluid connection with the channel, ~~for~~ receiving an open first, ~~open~~ end of a powder reservoir, the powder reservoir having an opening at or near to a second end of the powder reservoir to allow egress of gas from the powder reservoir at a point distal to the first end of the powder reservoir;

the method comprising the steps of:

(i) supplying gas via the gas supply inlet to the channel and the powder inlet at a velocity sufficient to cause fluidisation of powder at the powder inlet;

(ii) reducing the supply of gas to cause powder to pass from the powder inlet and to collect in a region of the channel adjacent a point where the powder inlet connects with the channel; and

(iii) repeating steps (i) and (ii) ~~as many a plurality of times as required,~~ subsequent initialisation of step (i) causing the powder collected in the channel to be moved by the gas towards the outlet.

11. (Original) A powder injection method according to claim 10 wherein in step (ii) the supply of gas is reduced to zero.

12. (Currently Amended) A powder injection method according to claim 10 wherein

the amount of powder collected in the channel is determined by ~~at least one of the following, separately or in combination:~~

- ~~i) the a height of the powder in the powder reservoir~~
- ~~ii) the dimension of the powder inlet.~~

13. (Cancelled).

14. (New) A powder injection microchip according to claim 1 wherein in step (ii) the supply of gas is reduced to zero.

15. (New) A powder injection microchip according to claim 3 further comprising at least two planar layers in at least one of which the channel is formed.

16. (New) A powder injection microchip according to claim 3 wherein the width of the channel is less than 5mm.

17. (New) A powder injection microchip according to claim 3 wherein the channel includes a bifurcated section, each branch of the bifurcated section being in fluid connection with the powder inlet.

18. (New) A powder injection microchip according to claim 3 wherein the amount of powder collected in the channel is determined by a height of the powder in the powder reservoir.